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Appl. No. 10/007,186
Arndt Dated: March 19, 2007
Office Action Dated: December 19, 2006

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•• REMARKS/ARGUMENTS ••

The Official Action of December 19, 2006 has been thoroughly studied. Accordingly, the following remarks are believed to be sufficient to place the application into condition for allowance.

Claims 1, 4 and 5 are pending in this application.

Claims 1, 4 and 5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Harbaugh, *Flowering of Eustoma grandiflorum (Raf.) Shnn. Cultivars influenced by Photoperiod and Temperature*, HortScience 30(7):1375-1377, 1995 in view of Coolbear et al, *An Evaluation of the Potential of Low Temperature Pre-Sowing Treatments of Tomato Seeds as Means of Improving Germination Performance*, Ann. appl. Biol. (1987), 110, pp. 185-194 (1987) and U.S. Patent No. 5,294,593 to Khan.

For the reasons set forth below, it is submitted that all of the pending claims are allowable over the prior art of record.

Favorable reconsideration by the Examiner is earnestly solicited.

The Examiner has relied upon Harbaugh as teaching:

...a known method of low temperature treatment to imbibed seeds at 10C for 5 weeks to effect/prevent rosette formation (Harbaugh page 1, abstract, last paragraph and page 5, Literature Cited, two articles by Pergol).

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The Examiner concedes that "Harbaugh is silent on the imbibing being water and that it is in the dark and drying the plant seed in a dark place."

"However," the Examiner states that "pre-germination treatment steps are old and notoriously well-known in the art of plant husbandry."

The Examiner further states that: "It is general knowledge in the art that light and darkness have effects on germination."

The Examiner takes the position that:

It would be obvious to one of ordinary skill in the art that if a particular seed is a light germinator it is desirable to treat and store the seed in the dark to prevent germination.

The Examiner has relied upon Coolbear et al. as teaching:

...the seed treatment of allowing seeds to imbibe water at 10C in darkness and then drying the seeds (Coolbear Methods, first paragraph) and inherently relative humidity of 100% (Coolbear teaches the seeds are in a cover dish and are continuously kept moist thus the humidity is 100%, Methods line 2-4).

The Examiner takes the position that:

It would have been obvious to one of ordinary skill in the art to modify the teachings of Harbaugh with the teaching of Coolbear at the time of the invention to enhance germination rates and improve uniformity of germination as taught by Coolbear (Coolbear Summary).

The Examiner has relied upon Khan as teaching that:

...it is old and notoriously well-known to dry hydrated seeds in the dark to prevent a break in dormancy (Khan Co. 3 line 40-49).

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The Examiner takes the position that:

It would have been obvious to one of ordinary skill in the art to modify the teachings of Harbaugh with the teachings of Khan at the time of the invention for preventing loss of dormancy for storing seeds for several months as taught by Khan (Khan Col. 3 line 50-53).

"Furthermore," the Examiner "maintains that is it old and notoriously well-known knowledge that light and darkness effects seed germination, some seeds germinate under the presence of a light source."

The Examiner concludes:

It would have been obvious to one of ordinary skill in the art to modify the teachings of Harbaugh at the time of the invention with the removal of a light sources to prevent light germinating seeds from germinating prematurely to enable storage of the seeds.

The Examiner has misinterpreted the teachings of Harbaugh.

Harbaugh does not teach "a known method of low temperature treatment to imbibed seeds at 10C for 5 weeks to effect/prevent rosette formation" as the Examiner states.

At the cited portion of Harbaugh, it is taught that:

Pergola et al. (1992) reported cold treatment (3C for 4 weeks) of imbibed seeds at 10C for 5 weeks resulting in 1005 [10%?] bolting in 'Fukushihai' and 53% bolting with 'Miyakomomo' seedlings subsequently grown at 33C day/18C night.

The Examiner seems to have confused "bolting" with "rosette formation" and has incorrectly equated these phenomena.

"Bolting" as described in Harbaugh is the "development of the first internode >3mm."

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Rosette formation on the other hand is when plants develop a rosette of leaves at the ground level.

Germination precedes rosette formation.

Rosette formation can be followed by bolting, if bolting is successful.

Flower formation, if successful, follows bolting.

At any stage, i.e. germination, rosette formation, bolting, or flowering, the normal (or successful) growth or development of a plant can fail.

Accordingly, one cannot infer that results at one growth stage imply success at another growth stage. This is evident in Harbaugh's statement in the fourth paragraph on page 3 that results in bolting do not always result in normal-flowering.

Since the cited portion of Harbaugh that the Examiner has relied upon is limited to bolting results, it is submitted that Harbaugh cannot be relied upon in the manner stated by the Examiner, i.e. as teaching "a known method of low temperature treatment to imbibed seeds at 10C for 5 weeks to effect/prevent rosette formation."

This misinterpretation of Harbaugh renders the Examiner's basis for relying upon the prior art unfounded and unsupported by the prior art.

Harbaugh does not teach that imbibing seeds at 10C for 5 weeks prevents rosette formation, and it cannot be inferred from the bolting data presented by Harbaugh that imbibing seeds at 10C for 5 weeks prevents rosette formation. There is no such teaching in Harbaugh.

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Further, as the Examiner concedes, Harbaugh fails to teach imbibing seeds in a highly watery condition in the dark to prevent germination and drying the seeds in the dark to prevent germination – for the overall purpose of preventing defective germination and rosette formation.

Coolbear et al. does not include any discussion as to the effect of the low-temperature pre-sowing treatment on rosette formation other than the statement that:

No evidence was found for improved seeding growth rates per se as a result of pretreatment: in fact, initial axis growth may be temporarily reduced, probably as a consequence of depletion of reserves during the treatment period.

If anything, Coolbear et al. teaches that initial axis growth after germination may be at least inhibited, if not adversely effected.

In any event, Coolbear et al., does not teach that the low-temperature pre-sowing treatment prevents defective rosette formation.

Further, Coolbear et al. does not teach leaving the seeds in a highly watery condition at a low temperature in a dark place for a period of time of from several days to several months to inhibit defective germination and rosette formation of the plant seed as required by applicant's claims.

Moreover, Coolbear et al. does not teach the time-critical condition of drying the seed in a dark place before the seed becomes active, the dark place being sufficient to prevent the plant seed from germinating.

If anything Coolbear et al. teaches drying the seeds in open Petri dishes at room temperature.

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From such a procedure it certainly cannot be inferred that Coolbear et al. provides any insight into (i.e. renders obvious) applicant's drying process that prevents defective germination and rosette formation.

Khan is directed at a method of "inducing releasable dormancy in non-dormant plant seeds" which involves soaking the seeds in a "gibberellin synthesis inhibitor solution."

As explained in column 2, lines 22-39 the gibberellin biosynthesis pathway includes seventeen steps. By introducing a gibberellin synthesis inhibitor into the seeds (by soaking the seeds in a gibberellin synthesis inhibitor solution), Khan induces dormancy into the seeds.

The Examiner had previously relied upon Khan as teaching:

...that it is old and notoriously well-known to dry hydrated seeds in the dark to prevent germination.

Presently the Examiner has relied upon Khan as teaching:

...it is old and notoriously well-known to dry hydrated seeds in the dark to prevent a break in dormancy (Khan Co. 3 line 40-49).

The drying discussed at column 3, lines 40-52 of Khan in a drying step (c), in which the hydrated seeds are dried in a dark place in order to prevent the inactive condition (i.e. dormancy) of the seed, wherein the drying step (c) is carried out after the immersion step (a) and after the washing step (b).

Accordingly, the drying step (c) of Khan does not correspond to the drying step of the present invention in which the drying takes place immediately after leaving the plant seed to stand in the highly watery condition at the low temperature in a dark place.

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Further, as the Examiner is no doubt aware, Khan fails to teach applicant's steps (a) and (b).

Overall it is noted that none of the prior art references relied upon and combined by the Examiner teach or are concerned with rosette formation or preventing rosette formation (despite the Examiner's contention that Harbaugh's reference to bolting data inferred rosette formation effects).

Accordingly, there is no basis for relying upon prior art to reject applicant's claimed invention or any basis for establishing that the prior art suggests or renders obvious applicant's claimed invention.

Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicant's claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejections of the claims should hence be withdrawn.

Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

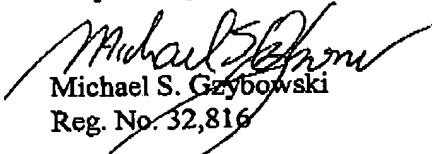
It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

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If upon consideration of the above, the Examiner should feel that there remain outstanding issues in the present application that could be resolved, the Examiner is invited to contact applicant's patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



Michael S. Gzybowski
Reg. No. 32,816

BUTZEL LONG
350 South Main Street
Suite 300
Ann Arbor, Michigan 48104
(734) 995-3110

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